

CLAIMS

1. 1. A method of treating an exhaust gas containing ammonia and metalorganic vapour, the method comprising: partially removing the metalorganic vapour from the exhaust gas; and exposing the exhaust gas to an ammonia decomposition catalyst.
1. 2. The method according to claim 1, wherein the metalorganic vapour is removed by partially decomposing the metalorganic vapour within the exhaust gas.
1. 3. The method according to claim 2, wherein the metalorganic vapour is decomposed by exposing the exhaust gas to a heated bed of one or more materials.
1. 4. A method of treating an exhaust gas containing ammonia and metalorganic vapour, the method comprising: exposing the exhaust gas to a heated bed of material to cause the metalorganic vapour to decompose, and then exposing the exhaust gas to an ammonia decomposition catalyst.
1. 5. The method according to claim 4, wherein the exhaust gas is conveyed into a first chamber containing the heated bed and subsequently into a second chamber containing the catalyst.
1. 6. The method according to claim 4, wherein the exhaust gas is conveyed into a single chamber sub-divided into two zones by the heated bed and the catalyst.
1. 7. The method according to claim 4, wherein the catalyst is heated to decompose the ammonia into nitrogen and hydrogen.

- 1 8. The method according to claim 7, wherein the catalyst comprises nickel
2 supported on a ceramic former.
- 1 9. The method according to claim 4, wherein the metalorganic vapour comprises
2 a metal-alkyl vapour.
- 1 10. The method according to claim 4, wherein the metalorganic vapour comprises
2 a group III metal.
- 1 11. The method according to claim 10, wherein the metalorganic vapour
2 comprises at least one of trimethyl gallium, trimethyl indium, and trimethyl
3 aluminium.
- 1 12. The method according to claim 4, wherein the heated bed comprises a metal
2 and a metal oxide.
- 1 13. The method according to claim 12, wherein the exhaust gas is exposed to the
2 heated metal and the exhaust gas exposed to the heated metal is exposed to
3 the heated metal oxide.
- 1 14. An apparatus for treating an exhaust gas containing ammonia and
2 metalorganic vapour, the apparatus comprising: means for partially removing
3 the metalorganic vapour from the exhaust gas, and means for exposing the
4 exhaust gas to an ammonia decomposition catalyst.
- 1 15. The apparatus according to claim 14, wherein the removing means comprises
2 means for partially decomposing the metalorganic vapour within the exhaust
3 gas.

- 1 16. The apparatus according to claim 14, wherein the removing means comprises
2 means for exposing the exhaust gas to a heated bed of one or more materials
3 for causing the metalorganic vapour to decompose.
- 1 17. An apparatus for treating an exhaust gas containing ammonia and
2 metalorganic vapour, the apparatus comprising: exposing means for
3 exposing the exhaust gas to a heated bed of one or more materials to cause
4 the metalorganic vapour to decompose and for subsequently exposing the
5 exhaust gas to an ammonia decomposition catalyst.
- 1 18. An apparatus according to claim 17, wherein the exposing means comprises
2 first and second sequential stages in communication with each other and
3 through which the exhaust gases pass during treatment, the first stage
4 containing the heated bed and the second stage containing the catalyst.
- 1 19. An apparatus according to claim 17, wherein the exposing means comprises
2 a single gas treatment chamber subdivided into two zones by the heated bed
3 and the catalyst.
- 1 20. An apparatus according to claim 19, wherein the exposing means comprises
2 a replaceable cartridge.
- 1 21. An apparatus according to claim 18, wherein the exposing means comprises
2 a first chamber containing the heated bed and a second chamber downstream
3 from the first chamber containing the catalyst.
- 1 22. An apparatus according to claim 17, comprising means for heating the
2 catalyst to decompose the ammonia into nitrogen and hydrogen.